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Psychometric assessment and refinement of the Homecoming Issues inventory of the Human Dimensions of Operations (HDO) project

M. Thompson
L. Pastò

Defence R&D Canada

Technical Report
DCIEM TR 2000-068
July 2000

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Canada

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EXECUTIVE SUMMARY

The Homecoming Issues scale, developed by the Directorate of Human Resources Research and Evaluation (DHRRE) in support of the Human Dimensions of Operations (HDO) project, is designed to assess aspects relevant to the homecoming experience of Canadian Forces (CF) peacekeepers. The Homecoming Issues scale was distributed as part of the HDO's Postdeployment Questionnaire to 202 CF peacekeepers who had recently returned from a peace support operation in Bosnia.

An initial review of the items comprising the Homecoming Issues scale led to the decision to separate the scale into three subcomponents: Homecoming Attitudes (HCA), Homecoming Events (HCE), and Homecoming Support (HCS). Next, we determined the psychometric soundness of the HCA and the HCS scales via a series of factor and reliability analyses. The HCE scale was categorical in nature and so was not amenable to similar psychometric analyses. Thus, data obtained from this scale were used to assess the proportion of returning peacekeepers that had experienced a variety of homecoming events.

Results of these analyses led to item selection and refinement recommendations for each of the measures that assess homecoming issues. A second phase of exploratory correlational analyses was conducted to answer four questions:

(1) What is the relation between each of the HCA and HCS scales, and the demographic profile of the respondents?

(2) What is the relation between each of the HCA and HCS scales and self-reports of depression, anxiety, hyper-alertness, and somatic complaints?

(3) What is the relation between each of the HCA and HCS scales and self-reports of military stressors?

(4) What is the relation between each of the HCA and HCS scales, and attitudes toward morale and various leadership dimensions?

Answers to these questions also are used to explore the validity of the Homecoming Attitudes and Homecoming Support scales. Recommendations for specific refinements to the scales that comprise the HCI are also made. In general, results of these analyses suggest the relevance of exploring homecoming issues and the viability of the HCI scale in particular.

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INTRODUCTION

Modern peace support operations entail a variety of extremely complex stressors (see Capstick, in press; Davis, 1997; Dallaire, in press; Everts, in press; MacKenzie, 1993, for compelling and insightful operational accounts of recent peace support operations). These stressors include "the need to directly enforce peace between warring factions, to deliver humanitarian aid in the midst of political-social devastation and to balance shifting rules of engagement" (Orsillo, Roemer, Litz, Ehlich, & Friedman, 1998, p.611), "feelings of helplessness and powerlessness" (Bartone, Adler, & Vaitkus, 1998, p. 587, see also Litz, King & King, 1997; Litz, Orsillo, Friedman, Ehlich & Batres, 1997) as well as a vulnerability to direct fire (Lamerson & Kelloway, 1996; Murphy & Gingras, 1997a; Murphy & Gingras, 1997b). Peace support operations are also characterized by seemingly more mundane stressors such as boredom, a lack of privacy, few opportunities for rest and relaxation, a sense of isolation and separation from family, dimensions that vary across the different operational phases of a peacekeeping mission (Bartone, Adler, & Vaitkus, 1998, p. 587; see also Halverson, Bliese, Moor, & Castro, 1995; Litz et al., 1997, Orsillo et al., 1998).

Beyond the deployment phase itself, there is also increasing evidence that the stress associated with a soldier's homecoming plays a vital role in ameliorating or impairing long-term adaptation. Advances in modern technology means that returning from overseas military service typically involves rapid return transportation home and significant organizational disruptions (unit reconfigurations, postings), allowing very little time for decompression or reintegration (Johnson, Lubin, Rosenheck, Fontana, Southwick, & Charney, 1997). Moreover, the homecoming of deployed personnel often occurs with very little fanfare (e.g., homecoming celebrations) by family, friends, or society at large (Johnson et al, 1997). Various factors may increase homecoming stress, characterized as a dynamic affective and cognitive state experienced by soldiers returning from overseas, and distinguished by beliefs that the returning service person is not welcomed home either by family or society. These perceptions include the quality of the immediate homecoming reception, the lack of appreciation or understanding of deployment experiences and little support by one's family or society, as well as events of privilege or discrimination that occur due to one's military service (Johnson et al, 1997).

Several studies (e.g., Fontana & Rosenheck, 1994; Johnson, et al., 1997; Wilson & Krauss, 1985) have underscored empirically the importance of homecoming and reintegration issues and their relation to the development of postdeployment problems, particularly Post Traumatic Stress Disorder (PTSD). For instance, level of homecoming stress based upon negative interpersonal interactions, social withdrawal and feelings of shame and resentment were significant predictors of PTSD, at least among a group of U.S. Vietnam veterans who were experiencing symptoms of PTSD (Johnson, et al., 1997). In fact, homecoming stress was the most significant predictor of PTSD, even after the effects of combat exposure (see also Fontana & Rosenheck, 1994), earlier trauma, and present stressful life events were accounted for. Exploring the dimensions of homecoming stress more specifically, Wilson & Krause (1985) found that it was psychological isolation during postdeployment that had the most profound and devastating effect on returning Vietnam veterans. These feelings of loneliness and of being disconnected were the strongest predictor of PTSD even 10 years after the war's end, accounting for 43 percent of the variance in

PTSD among this sample. Results such as these led Fontana and Rosenheck (1994) to conclude that "the homecoming is a critical event in determining whether acute stress reactions are either diminished to subclinical intensity or are preserved undiminished to become recognized at some later point as PTSD" (p. 683).

PTSD has been the overwhelming focus of the majority of studies regarding the consequences of deployment stressors generally, and homecoming issues in particular. Reasons for this focus are that the symptomology associated with PTSD is both profoundly debilitating and is a recognized syndrome by the American Psychiatric Association (American Psychiatric Association, 1994). Yet, problems in reintegration and postdeployment adjustment may be wide ranging and have considerable long-term consequences for both returning soldiers and their families. These other post-deployment problems include alcohol abuse and dependence, generalized anxiety, antisocial behaviors, social isolation and hostility (Orsillo et al., 1998). Although these maladaptive behaviors have previously been associated with stressful combat experiences, the reality of modern peace support service suggests that it too involves similar intensity stressors (e.g., Capstick, in press; Davis, 1997; Dallaire, in press; Everts; in press; Halverson et al., 1995; MacKenzie, 1993; Orsillo et al., 1998). Thus, we may anticipate that the psychological and interpersonal consequences of peace support operations are similar to those that have been related primarily to traditional warfighting.

THE HUMAN DIMENSIONS OF OPERATIONS (HDO) PROJECT

The leadership of the CF has recently publicly acknowledged the impact of operational stress upon personal and professional performance. A number of research initiatives have been undertaken in order to better address the issue of operational stress. One of these initiatives, the HDO project (Farley & Murphy, in press) has led to the creation and standardization of the HDO questionnaire by the Operational Effectiveness Section of the Directorate of Human Resource Research and Evaluation (DHRRE). The HDO questionnaire was developed, in part, to quantify the various sources, correlates, and consequences of operational stress as it affects CF personnel. With different versions of the HDO questionnaire, operational stress may be assessed at several points along the deployment cycle: predeployment, employment, and postdeployment. When possible, the HDO used existing measures in their entirety or modified to apply to a Canadian peacekeeping context. In several instances, however, original scales were developed specifically for the HDO questionnaire. The purpose of the present report is to evaluate the psychometric quality of the *Homecoming Issues* scale, one of the newly developed measures in the HDO Postdeployment questionnaire. This work was undertaken by the authors as part of the on-going collaborative research relationship between DCIEM's Command Group and DHRRE.

THE HOMECOMING ISSUES SCALE (HCI)

The HCI scale, presented in Appendix A, contains 34 items that cover a variety of issues relevant to the homecoming experiences of military personnel. The HCI is organized into three content areas: Homecoming Attitudes (HCA, items 1 to 23), Homecoming Events (HCE, items 24 to 33), and Homecoming Support (HCS, items 34a to 34m). Each of these general sections contains a separate response scale also contributing to the decision to treat these three areas as separate measures.

Homecoming Attitudes
The *Homecoming Attitudes* (HCA) Scale, consisting of the first 23 items of the HCI scale, assesses how often personnel have experienced a number of positive and negative attitudes or emotions in the period since their return from deployment (e.g., "*You felt proud about serving overseas*", "*You felt like 'dropping out' of society.*"). Respondents answered each of these items according to the following scale: 0 - Never, 1 - Rarely, 2 – Sometimes, 3 – Frequently, 4 – Very Frequently. Ten of the 23 items were taken from the West Haven Homecoming Stress Scale (Johnson et al., 1997) either directly, or with slight wording alterations.

Homecoming Events
The *Homecoming Events* (HCE) scale, consisting of items 24 through 30, assesses a series of occasions, circumstances, or events that respondents experienced since returning from a peace support mission. Responses are made on a categorical (yes-no) scale, and reflect the type of homecoming celebrations they participated in, the specific homecoming problems they encountered (e.g., trouble with the law, an increase in drinking, and serious medical or health concerns), and whether their postdeployment leave was spent with family. Two additional items assessed: a) the length of immediate postdeployment leave (1-6 days, 7-13 days, 14-20 days, 21-27 days, 28 or more days), and b) how much respondents enjoyed their postdeployment leave (1 – Not at all , 2 – A little, 3 – Somewhat, 4 – Considerably, 5 – Greatly). A further item asked respondent to describe their living arrangements since returning from deployment.

Homecoming Support
The *Homecoming Support* (HCS) Scale, consisting of items 34a through 34m, assessed the level of perceived support respondents received since returning from deployment from various sources including: family members, friends, colleagues, their military unit, the CF, the Canadian government, and Canadian society in general. Responses were made on a scale ranging from 0 – Not Applicable, 1 – very unsupportive, 2 – supportive, 3 – supportive 4 very supportive.

Establishing the Psychometric Properties of a Scale

1) Reliability and Factor Analyses

In traditional psychometric research, the first round of analyses undertaken to ascertain the psychometric quality of a scale includes reliability and factor analyses. Factor analysis enables the identification of a set of dimensions (i.e., factors) that underlie a set of scale items (Tabachnick & Fidell, 1996). Factor loadings represent the weight of an item on a particular factor. Through reliability analyses, the internal consistency of a measure is assessed via item-total correlations and Cronbach alpha values. Reliability analysis aids in ensuring that all the items on a scale measure the same construct or phenomenon (Pedhazur & Schmelkin, 1991).

Scale refinement is typically based upon the results of an initial round of psychometrics. A second round of factor and reliability analyses is then conducted to confirm the soundness of the revisions. Item selection is usually an iterative process, and a scale may require several revisions in order to ensure optimal properties (e.g., Thompson, Nacarrato, Parker & Moskowitz, in press). Although establishing the factor structure and the reliability of a measure does not ensure a measure's validity, they are nonetheless considered essential techniques in the assessment of overall psychometric quality (Pedhazur & Schmelkin, 1991).

2) The Multitrait – Multimethod Matrix

The multitrait-multimethod matrix (MTMT; Campbell & Meehl, 1955; Campbell & Fiske, 1959) is one of the most common approaches used to establishing the validity of a newly developed measure. MTMT involves the use of multiple indicators of related constructs to determine whether the new measure under consideration are related in predicted ways to these other scales (see Selltiz et al., 1976). Specifically, this approach is designed to begin to assess the construct validity of new measures (Campbell and Meehl, 1955). MTMT involves the use of multiple indicators of related constructs to determine whether the new measure under consideration are related in predicted ways to these other scales (see Campbell and Meehl, 1955; Selltiz et al., 1976). Specifically, this approach is designed to begin to assess the construct validity of new measures (Campbell and Meehl, 1955).

The ideal validity study would be designed with the inclusion of additional comparison scales that are selected to demonstrate that the HCA and the HCS are related to some scales and are not related to other scales. Convergent validity is assessed by relating a newly developed measure with an established scale that is presumed to measure similar constructs. Discriminant validity is assessed by relating a new measure with a second, and presumably unrelated, established scale.

However, the original aim of the HDO Postdeployment questionnaire was to assess deployment outcomes, and not to perform psychometric refinements of new measures. Thus, the validity analyses report here are opportunistic and exploratory in nature. Specifically, we take advantage of the scales within the HDO postdeployment questionnaire primarily to answer the following questions, and secondarily to begin to ascertain the validity of the HCA and HCS measures.

(1) What is the relation of the Homecoming Attitudes and Homecoming Support scales to demographic data for this sample of CF personnel who have recently returned from a peace support deployment?

(2) What is the relation of the Homecoming Attitudes and Homecoming Support scales to self-reports of depression, anxiety, hyper-alertness and somatic complaints among CF personnel who have recently returned from a peace support deployment?

(3) What is the relation of the Homecoming Attitudes and Homecoming Support scales to self-reports of military stressors, among CF personnel who have recently returned from a peace support deployment?

(4) What is the relation of the Homecoming Attitudes and Homecoming Support scales to self-reports of military attitudes tapping morale and various leadership dimensions, among CF personnel who have recently returned from a peace support deployment?

METHOD

SUBJECTS[1]

202 Canadian Forces personnel who recently returned from a peace support operations tour in Bosnia completed the HDO Postdeployment Questionnaire. All respondents were from the lower ranks (43 privates, 157 Jr. NCMs). The majority of respondents were male (males: 198, females: 2), regular force (201, reservists: 2), who had served in the CF between 5 and 14 years. Five individuals had not served on a prior peace support operation, while 194 respondents had served on at least one prior peace support operation. Of the experienced peacekeepers, 51 respondents (or 26% of the sample) served on 3 or more similar tours of duty (36 respondents served on 3 prior tours, 10 respondents served on 4 prior tours, and 5 respondents had served on more than 5 prior tours). Table 1 summarizes the demographic information for this sample.

Military personnel completed the HDO postdeployment questionnaire in the training building located on a CF base approximately 6 months after returning from peace support operations in Bosnia. Questionnaire administration was conducted in small groups by the Personnel Selection Officer who had deployed with the unit to Bosnia.

MEASURES

In addition to the *Homecoming Issues* scale described above, the *Human Dimensions of Operations Postdeployment Survey* also contains several additional scales.

The *SIGNS* is a 36-item self-report measure of depression and withdrawal, hyper-alertness, generalized anxiety, and somatic complaints. Twenty-one items were taken from a symptoms checklist (Bartone, Ursano, Wright & Ingraham (1989). Fifteen additional items were added to the scale tapping fatigue, anxiety and psychotrauma (Dobreva-Martinova, 1998b). The *Service Experiences Scale* contains 12 items from Mississippi Scale for combat-related Posttraumatic Stress Disorder (PTSD). This scale also contains two items assessing the traumatic events experienced by the respondent, and a final item in which the respondents indicate their willingness to undertake a future overseas operational deployment. The *Stress in Military Service* scale, developed by DHRRE (see Dobreva-Martinova, 1998a), has 35 items tapping four sources of stress for military personnel including: the work environment, external conditions, combat stressors, career issues and family concerns. The *Tour in Perspective* scale contains 12 items assessing respondents' perception of the meaning and the impact of their peace support operation at the personal, contingent, and CF levels (see Dobreva-Martinova, 1999). Finally, the *Unit Climate Profile* (UCP) is a 62-item scale that is designed to assess several individual and group-level psychological dimensions assumed to be relevant to operational effectiveness (Dobreva-Martinova, Murphy & Farley, 1998; Farley & Murphy, in press).

PROCEDURE

In phase one of the results, factor and reliability analyses were used to facilitate scale item analysis, and subsequent refinement of the HCA and HCS scales. A second exploratory factor analysis with hierarchical oblique rotation was also undertaken when there was an expectation of a correlation between the factors that comprise a scale (Pedhazur & Schmelkin, 1991). Results

of the factor analyses with hierarchical oblique rotation are summarized in the text of the Results section, and are summarized in table form in the Appendix section of this report.

In a second phase of the results, a series of correlational analyses explore the relations *within* and *between* the factors comprising the HCA and the HCS scales. This section also explores the relation between both the HCA and HCS scales, as well as their relation to the SIGNS, Stress in Military Service, Service Experience, and Tour in Perspective measures. As emphasized in the introduction, these correlational analyses are opportunistic in nature. Thus while suggesting relations among the measures, these analyses provide only preliminary evidence of the validity of the HCA and HCS measures.

RESULTS

PHASE ONE: ESTABLISHING THE FACTOR STRUCTURE AND THE RELIABILITY OF THE HOMECOMING ATTITUDES AND HOMECOMING SUPPORT MEASURES

I) HOMECOMING ATTITUDES (HCA)

FACTOR ANALYSIS. Two criteria were used to determine the appropriate number of factors. First, the scree plot, a graphical display of the eigenvalues for successive factors, was inspected for discontinuities in slope. Specifically, a clear discontinuity in slope is indicated at a point where the smooth decline in eigenvalues levels off to the right of the plot. Only factors to the left of this point were retained. Second, factors were only retained if they were amenable to meaningful interpretation within the context of the constructs presumed assessed by the scale. Within each factor, only individual scale items with factor loadings of at least .40 were retained and used for interpretation.

Results of the principal components analysis with varimax rotation, presented in Table 2, show that a four-factor solution best characterizes the items of this scale. More specifically, 6 items made up the first factor, *Negative Attitudes/Disengagement* (items 3, 8,9, 14, 15 & 22), and accounted for 12% of the variance in Homecoming attitudes. The second factor, *Positive Attitudes/Engagement* included 5 items (items 1, 4, 5, 6, & 23) and accounted for 10% of the variance in HCA. Three items loaded on a third factor (items, 11, 13, & 20) and seemed to tap whether one had received *Special Privileges* as a result of service on a peace support operation. The third factor accounted for 9% of the variance. A final factor accounted for 13% of the variance in HCA scores. This factor was comprised of 5 items (Items 7, 12, 16, 19, & 21) and tapped *Readjustment Problems* experienced since returning home.

Results of the factor analysis with hierarchical oblique rotation (contained in Appendix B) were also conducted here, as there was an expectation that the factors underlying the Homecoming Attitudes scale would correlate. For instance, Homecoming Problems were expected to be positively correlated with Negative Attitudes /Disengagement and negatively correlated with Positive Attitudes/Engagement. Results of this analysis revealed the same pattern of results with respect to both the numbers of factors that emerged and the items retained on each factor, with two exceptions. Item 9 just failed to meet the factor loading criterion for inclusion on the first factor, and item 21 failed to reach the criterion for inclusion on the fourth factor.

The correlations among the four factors of the HCA, presented in Table 3, indicated that *Negative Attitudes/ Disengagement* showed a small negative correlation ($r = -.20$) with the *Positive Attitudes/Engagement* factor, a small positive correlation with *Special Privileges* ($r = .26$), and a strong positive correlation with *Readjustment Problems* ($r = .50$). *Positive Attitudes/Engagement* had a small positive correlation with *Special Privileges* ($r = .18$) and was unrelated to *Readjustment Problems* ($r = -.01$). *Special Privileges* also showed a small positive relation to *Readjustment Problems* ($r = .24$).

RELIABILITY ANALYSES. Reliability analyses were conducted for each of the four factors of the HCA separately. These results summarized in Table 4, show that the *Negative Attitudes/Disengagement* factor had a Cronbach alpha of .75 with item-total correlations ranging from .46 to .54. Inspection of the items indicated that each contributed about equally to the overall strength of the scale. The second factor, *Positive Attitudes/Engagement*, yielded a weak Cronbach alpha of .35, with item-total correlations ranging from -.37 to .40. Review of each of the items indicated that item 6 ("*You regretted having served in Bosnia*") was particularly weak and substantially lowered the reliability of the factor. The 3-item *Special Privileges* factor also had a low Cronbach alpha of .42 with item-total correlations ranging from .23 to.32. Inspection of the item-total correlations and the alphas-if-item-deleted values indicated that each item contributed to this factor about equally. Thus, the deletion of any one item will not increase the overall reliability of the *Special Privileges* factor. Although a lower Cronbach alpha can be expected with factors containing fewer numbers of items, these relatively low numbers suggest that further investigation may be warranted to determine if the *Special Privileges* factor should be retained in the HCA. The forth subscale, *Readjustment Problems*, has a respectable alpha of .78 with item-total correlations ranging from .43 to .72.

HOMECOMING ATTITUDES SCALE ITEM SELECTION RECOMMENDATIONS

Item 6 – "*You regretted that you served in Bosnia*"
This item has a high level of face validity as part of the HCA scale. Review of its loading on each of the four factors indicated that it loaded exclusively (and negatively) on the second factor, *Positive Attitudes/Engagement*. It's loading on each of the other 3 factors were below .20. Nevertheless, this item substantially reduced the reliability of the *Positive Attitudes/Engagement factor*. Thus, it is recommended that this item be deleted from the HCA.

Item 7 – "*You experienced marital or relationship problems*"
This item provides very valuable information on the reintegration process. Moreover, it loads well on the *Readjustment Problems* factor of the scale. Although this item does not reflect an attitude per se, it is recommended that it remains a part of the scale. Alternatively, this item may be moved to another relevant section, such as Homecoming Events scale.

Item 8 – "*You felt anger at the government*"
The specific government (i.e., Canadian or Bosnian) that is the target of anger should be explicitly indicated.

Item 10 – "*You separated or divorced from your partner*"
This item does not reflect a Homecoming Attitude. More importantly, this item does not fit with the response stems provided in the first section of the Homecoming Issues Scale (never – very frequently). It is recommended that Item 10 be placed elsewhere, for instance in the Homecoming Events portion of the HCIS.

Item 14 – "*You felt like getting out of the military*"
The intent of this question may need to be more specific because there are many reasons why someone may choose to leave the military. If the intent is to see if the motivation to leave the

military stems from deployment experiences, then the question may need to be reworded to reflect this intent.

Special Privileges Factor – Items 11, 13, 20

Although these items did cluster together in a single factor, item 11 (" *You thought about returning to Bosnia to help out in some way other than in uniform*") does not fit well with the other two items that specifically mention special privileges or treatment. Moreover, the *Special Privileges* factor does not attain a very high alpha value, although no one item accounts for the weakness of the factor. Inspection of the frequencies for these items indicates that very few respondents endorsed categories other than "never" and "rarely". Thus, unless researchers have a particular interest in the special privileges dimension, it is recommended that these three items be deleted from future versions of the HCA.

A Revised Homecoming Attitudes Scale

Factor Analysis. A second principal components analysis was undertaken to confirm the viability of a three-factor revision of the HCA scale. In this case the PCA was conducted on the HCA minus items 6, 10, 11, 13, and 20. Results of this analysis yielded a three-factor solution.

The first factor contained 6 items (HCA 7, 9, 12, 16, 19, & 21), accounted for 19 % of the variance in homecoming attitudes and reflected *Readjustment Problems*. The second factor, *Positive Attitudes/Engagement*, accounted for 14 % of the variance in HCA scores, and contained 4 items. The third factor measured *Negative Attitudes/Disengagement*, contained 6 items, and accounted for 17% of the variance in responses to the Homecoming Attitudes scale. Thus, the revised scale accounts for approximately 50% of the variance in the homecoming attitudes of this sample. An exploratory factor analysis with hierarchical oblique rotation yielded an identical pattern of factor loadings.

The pattern of correlations among factors in the revised Homecoming Attitudes-scale indicated that the *Readjustment Problems* factor was uncorrelated with *Positive Attitudes/Engagement* (r = .12), but positively correlated with *Negative Attitudes/ Disengagement* (r = .49). Interestingly, the *Positive Attitudes/Engagement* factor was uncorrelated with *Negative Attitudes/Disengagement* (r = -.09). The results of this factor analysis with hierarchical oblique rotation are detailed in Appendix C.

Reliability Analysis. A second reliability analysis was also conducted on the three remaining factors of the revised HCA. As Table 7 shows, the alphas of each of the subscales were respectable (*Readjustment problems*: α = .78, *Positive Attitudes/ Engagement*: α = .63, *Negative Attitudes/Disengagement*: α = .75). Although the alpha of the *Positive Attitudes/ Engagement* factor is somewhat low, recall the scale is comprised of only four items. Inspection of the item-total correlations and the alpha-if-item-deleted suggests that the items of each of the factors are strong contributors to factors' reliability.

II) HOMECOMING EVENTS

The questions asked in the Homecoming Events section of the Homecoming Issues Scale are all framed in a categorical "*yes*" or "*no*" response format. The categorical nature of these items does not lend itself to a typical scale development approach of factor analytic and reliability techniques. Thus, items comprising the HCE were loosely grouped together and only response frequencies were calculated for each item.

HOMECOMING CELEBRATIONS. Items in this group tapped family parties, homecoming parades, and base/barracks parades. Results of these computations indicated that the return of most of the Canadian peacekeepers in this sample was not marked by any kind of celebration. As Table 8 indicates, 73.3 % of the sample did not have a family party or celebration, 97.5% did not have a homecoming parade, and 91.6% did not participate in a parade at their base or barracks.

HOMECOMING PROBLEMS. Three items explored a range of postdeployment problems including: increased alcohol consumption, trouble with the law, and serious medical concerns or health problems. As Table 8 also indicates, the great majority of returning peacekeepers reported very few of these particular homecoming problems. Specifically, 90.6% of respondents reported no increase in their alcohol consumption since their return to Canada, 95.1% reported no postdeployment trouble with the law, and 81.7% reported no serious medical or health concerns since their return from peace support operations.

POSTDEPLOYMENT LEAVE. Three additional items addressed aspects of respondents postdeployment leave experience. Results indicated that most returning soldiers spent their leave with their families (86.1%), and that the duration of postdeployment leave was 21 or more days (81%). Moreover, most respondents stated that they enjoyed their leave considerably (25.7%) or greatly (45.05%).

III) HOMECOMING SUPPORT

Five different response choices are available for each item of the HCS scale. A response of '0' indicated that the source of support was 'not applicable', a '1' meant that the source was perceived as 'very unsupportive', a '2' meant the source was 'unsupportive', with '3' and '4', indicating sources that were 'supportive' and 'very supportive', respectively. The inclusion of the '0' or 'not applicable' response option meant that, as originally constructed, the support scale was not a continuous measure of perceived level of support. In order to determine the degree of support for each source, respondents who had selected the not applicable option for any one support source were deleted from the analyses for that item (i.e., pairwise deletion of data) (Table 13 summarizes the number of 'not applicable' responses for each item of the Homecoming Support Scale).

FACTOR ANALYSES. Principal component analyses of the HCS scale produced four discernable factors. The first factor contained 4 items (Unit support, CF support, government support, and societal support) and appears to measure *Organizational Forms of Support*. This factor accounted for 25 % of the variance in responses to the HCS scale. The second factor included items tapping support from members of one's family of origin (*Birth Family* – mother, father, siblings, other family members) and accounted for 16% of the variance in responses. The third factor, accounting for 19% of the variance in responses, tapped support from *Friends and*

Colleagues (friends, work colleagues who deployed with you, work colleagues who did not deploy with you). The final factor tapped support from *Partner/Spouse & Children*. This factor consisted of 2 items and accounted for 11% of the variance in support responses.

A factor analysis with oblique rotation, detailed in Appendix D, was also conducted to calculate the correlation between factors of the Homecoming Support scale and produced results that were essentially identical to those of the PCA. The pattern of correlations among the oblique factors indicated that organizational support was slightly to moderately positively correlated with the other three factors comprising the HCS scale (r's = .36, .52, and .19 for *Birth Family*, *Friends and Colleagues*, and *Partner/Spouse and Children*, respectively). The *Birth Family* factor was positively correlated with the *Friends and Colleagues* factor (r = .48) but, interestingly, was uncorrelated with the *Partner/Spouse and Children* factor (r = .04). Finally support from *Friends and Colleagues* was positively correlated with support from *Partner/Spouse and Children* (r = .29).

RELIABILITY ANALYSES. Reliability analyses were conducted on all the factors of the HCS scale except for the *Partner/Spouse and Children* factor that only contains two items. Results of these analyses, contained in Table 12, indicate that the *Birth Family* factor yielded a Cronbach alpha of .73, with item-total correlations ranging from .44 to .69. The *Friends and Colleagues* factor produced an alpha of .77, with item-total correlations ranging from.52 to .70. Finally the *Organizational Forms of Support* factor had an associated alpha of .90, with item-total correlations ranging from .67 to .88.

HOMECOMING SUPPORT SCALE RECOMMENDATIONS

A review of the item statistics, and results from the factor and reliability analyses conducted here suggested that all of the items comprising the HCS scale should be retained. First, all the items appear to have face validity for a scale designed to tap level of support from multiple sources. Second, items cluster into relevant and meaningful dimensions when subjected to factor analytic techniques. Third, scale factors all yield respectable alpha coefficients and no item in particular decreases any of the alpha values. Fourth, results of descriptive analyses summarized in Tables 12 and 13 (i.e., reliability analyses and response frequencies) indicate that there is sufficient variation in the level of perceived support to warrant inclusion of all the items.

Two issues are of note however. First, frequency distributions indicated that between 10.4% and 60.9% of respondents used the response option of 'not applicable' for these items. The use of 'not applicable' on items tapping perceived level of support from family members, partners, and children suggests that these family members are not living or that respondents married without children, or are single. The meaning of 'not applicable' is less clear when used with regard to support from colleagues (both deployed and non-deployed), your unit, the CF, the Canadian government, and Canadian society. It does seem odd that the support from one's unit, colleagues, the CF, the Canadian government, and society is not applicable to at least some respondents. This may mean that most respondents simply never sought support from these sources. Perhaps future versions of the scale should clarify this issue by providing respondents with an opportunity to list their sources of support, and the level of support that was received from each.

The second issue concerns the subscale assignment of the item "*support from other family*". The item content does not clearly align with any one of the factors identified by the factor analyses. Specific factor analytic results suggest that this item loaded on the *Friends and Colleagues* factor. Subsequent analyses were conducted with this item included on both the *Friends and Colleagues* and the *Birth Family* factors. Results of these parallel analyses indicated that the inclusion of this item on either factor makes little empirical difference in the results obtained with this sample.

PHASE TWO: EXPLORATORY ANALYSES OF THE HOMECOMING ATTITUDES AND HOMECOMING SUPPORT MEASURES WITH SELECTED POSTDEPLOYMENT OUTCOMES

A series of correlational analyses were conducted to establish the relation between each of the HCA and HCS scales, and selected instruments in the HDO Postdeployment questionnaire. The analyses summarized in this section are based upon the following instruments: SIGNS, Stress in Military Service scale, Service Experiences Scale, and the Tour in Perspective scale.

PRELIMINARY ANALYSES

Tables 15 through 17 present the overall reliability of each of the instruments selected to assess the validity of the HCA and HCS scales. As the tables indicate, Cronbach alphas for these scales range from a low of .57 for the Service Experiences Scale, to .96 for the Company Sergeant Major leadership scale of the UCP with a median reliability of .85.

Additional preliminary analyses, summarized in Appendix E, revealed little association between either of the HCA and HCS scales and respondent demographic data (e.g., respondents' rank, military status, years of experience, gender, age, marital status, number of previous peace support operations, number of dependents, number of medical visits). As one might expect, positive relations did exist between level of perceived support from partners and children and number of dependents ($r = .60$, $p < .001$), number of previous tours ($r = .22$, $p < .007$), years of service ($r = .24$, $p < .002$), and age of respondent ($r = .28$, $p < .001$). These relations are expected, as older respondents are more likely to have been in the service longer, and thus have more previous tours and are more likely to be married and to have children. Some unexpected results did emerge, however. Number of dependents was positively associated with readjustment problems ($r = .21$, $p < .05$), and greater years of service was associated with self-reports of less positive attitudes ($r = -.21$, $p < .05$) among these respondents.

I) THE RELATION AMONG THE FACTORS OF THE HOMECOMING ATTITUDES AND HOMECOMING SUPPORT SCALES

Table 14 presents the correlations among the factors of the HCA and HCS scales. With respect to correlations among the factors of the HCA scale, greater postdeployment readjustment problems are associated with the greater endorsement of negative attitudes ($r = .40$, $p < .001$). Interestingly, experiencing positive attitudes concerning the deployment was unrelated to negative attitudes or to readjustment problems (r's = .12, ns and -.12, ns, respectively), indicating the complex structure of these deployment attitudes.

Table 14 also indicates a correlation exists among all the sources of support within the HCS scale (*r's* between .19 to .49). One exception to this pattern emerged. The level of perceived support from one's parents and siblings was unrelated to the level of perceived support from friends and colleagues ($r = .05$, ns).

With respect to the relation among factors across the HCA and the HCS, it appears that readjustment problems are unrelated to any of the indices of perceived support. Greater negative attitudes are associated with less perceived support from the CF and Canadian society ($r = -.37$, $p < .01$), and slightly associated with less perceived support from friends and colleagues ($r -.16$, $p < .01$), but unrelated to perceived support from parents and siblings ($r = -.02$, ns) or from spouse/partner and children ($r = -.06$, ns). Positive attitudes about the deployment were associated with greater perceived support from all support sources (r's between .22 and .36, p's < .01), except Spouse/Partner and Children ($r = .05$, ns).

(II) The relation of Homecoming Attitudes and Homecoming Support to self-reports of depression, anxiety, hyper-alertness and somatic complaints

Correlations between the factors of the HCA with the factors of the SIGNS questionnaire, presented in Table 15, indicate that individuals who were experiencing greater problems in postdeployment readjustment tended to experience more symptoms of depression and withdrawal ($r = .41$, $p < .001$), more symptoms of hyper-alertness ($r = .24$, $p < .05$), greater generalized anxiety ($r = .28$, $p < .05$), and more somatic complaints ($r = .27$, $p < .05$). Negative postdeployment attitudes were also associated with reporting higher numbers of symptoms associated with depression ($r = .43$, $p < .001$), hyper-alertness ($r = .37$, $p < .001$), anxiety ($r = .26$, $p < .05$), and somatic complaints ($r = .29$, $p < .05$). Interestingly, positive postdeployment attitudes were unrelated to any of the SIGNS subscales, attesting to the multidimensional nature of postdeployment attitudes.

Table 15 demonstrates the pattern and the magnitude of findings that exist between perceived social support indices and subscales of the SIGNS. As indicated, it appears that higher levels of perceived support from external and organizational sources, greater support from one's parents and siblings, and greater support from friends and colleagues were related to less depression among respondents (*r's* = - .17, - .16 & - .19, respectively, all *p's* < .05). Higher levels of physical symptoms were associated with less perceived support from organizational sources ($r = -.18$, $p < .05$), and from friends and colleagues ($r = -.17$, $p < .05$). Only support from friends and colleagues was related to less hyper-alertness ($r = -.15$, $p < .05$). Perceived support was unrelated to expressions of generalized anxiety. Although all of the cited results are significant, the magnitude of the relations between perceived social support and SIGNS indices are quite low.

(III) The relation of Homecoming Attitudes and Homecoming Support scales to self-reports of military stressors

Results of correlational analyses exploring the relations between the HCA and HCS factors and responses on the Stress in Military Service scale, the Service Experiences scale, and Tour in Perspective scale, included in Table 16, revealed an interesting pattern of results. Difficulty in postdeployment adjustment was strongly associated with greater stress due to external conditions (i.e., harsh environments, and dealing with people and agencies outside the CF) ($r = .30$, $p < .05$),

family concerns (r =.51, p < .001), and weakly associated with combat stressors (r =.16, p <.05), career issues (r = .17, p < .05) and stress due to work environment (r = .19, p < .05). Readjustment problems were associated with higher scores on the Mississippi PTSD scale, part of the Service Experiences Scale, (r = .41, p < .001), but were unrelated to developing a positive perspective on the peace support operation (r = -.09, ns).

As also might be expected, CF personnel who experienced the most positive attitudes concerning their deployment also had been able to put a more positive cognitive framing upon their deployment experience, reflected in higher scores on the tour in perspective (r = .48, p < .001). Surprisingly, experiencing positive attitudes towards the deployment was also related to experiencing greater levels of combat stress (r = .23, p < .05). These results differ from the body of research that suggests higher levels of PTSD are associated with negative attitudes and distress concerning specific military experiences (e.g., Litz et al., 1997; Orsillo et all, 1998).

Negative attitudes concerning the deployment were positively associated with many HDO measures including stress due to the work environment (r= .43, p <.001), external conditions (r= .41, p <.001), career issues (r= .32, p <.01), and family concerns (r= .24, p <.05). Interestingly, negative attitudes were not associated with experiencing combat stress as measured by the SMS scale, but were associated with higher overall scores on the Service Experiences scale (r = .41, p < .001), and with less likelihood of developing a positive perspective toward the peace support tour (r = -.30, p < .01).

The pattern of results presented in Table 16 show that perceived level of support was not meaningfully associated with responses on the SMS scale, the Service Experiences scale, or the Tour in Perspective scale. Some exceptions to this pattern did occur, however. Greater perceived organizational support was associated with less stress due to the work environment (r = -.32, p < .05), external conditions (r = -.22, p < .05), and career issues (r = -.26, p < .05). Greater perceived organizational support was also associated with fewer PTSD symptoms as measured by the Services Experiences scale (r = -.22, p < .05), and with the tendency to put the tour in perspective (r =.30, p < .05). Greater support from friends and colleagues was also associated with the ability to put the tour in perspective (r = .27, p < .05). Finally, greater perceived support from one's partner, spouse and children was somewhat related to greater combat-related stress (r = .19, p < .05).

(IV) The relation of Homecoming Attitudes and Homecoming Support scales to self-reports of military morale and leadership attitudes

Correlational analyses were also conducted to determine the relation between responses on the HCA and HCS, and attitudes toward military morale and leadership tapped by the Unit Climate Profile. Due to the large number of UCP subscales, only major trends in the results are discussed here. These results, presented in Table 17, suggest that problems with postdeployment readjustment are related to lower levels of morale and cohesion (r = -.33, p < .01), fewer perceived positive leadership behaviors (r = -.28, p < .01), as well as less confidence in the leadership skills of both senior noncommissioned officers (r = -.26, p < .01) and section commanders (r = -.28, p < .01). Readjustment problems were not associated with reports of negative leadership behaviors (r = -.02, ns). Positive attitudes were associated with a more positive military ethos (r = .43, p < .01), and greater professional morale (r = .29, p < .01), but

not with leadership skills or behaviors among more senior CF personnel. Higher levels of negative attitudes were primarily associated with less group morale and cohesion ($r = -.41$, $p < .001$), reports of fewer positive leadership behaviors ($r = -.30$, $p < .01$), less positive military ethos ($r = -.32$, $p < .01$), and perceptions of less skilled leadership from senior ranking officers. Interestingly, negative attitudes were unrelated to level of professional morale ($r = -.08$, ns).

Table 17 also indicates that sources of perceived support were largely unrelated to the UCP measures. As might be expected, of the sources of perceived support, organizational support was positively associated with higher levels of morale and cohesion ($r = .22$, $p < .05$), positive leadership behaviors ($r = .23$, $p < .05$), and better leadership from the company commander ($r = .26$, $p < .05$). Unexpectedly, greater perceived organizational support was also related to a higher incidence of negative leadership behaviors ($r = .28$, $p < .05$). Finally, greater perceived support from friends and colleagues was related to a more positive military ethos, ($r = .27$, $p < .05$) and to higher levels of morale and cohesion ($r = .21$, $p < .05$).

SUMMARY AND DISCUSSION

In this report, we evaluated and refined the Homecoming Issues (HCI) scale in DHRRE's HDO Postdeployment Questionnaire. The items of the HCI were initially divided into three general content areas. This division was based upon two criteria: the distinct content areas tapped by the items and the differences in the scalar response options of each section. The first section tapped a variety of 'Homecoming Attitudes' (i.e., items tapping positive and negative thoughts and feelings associated with the deployment). The second general section represented 'Homecoming Events' (i.e., items assessing celebrations and problems associated with the return from a peace support operation). The final general section of the HCI addressed perceived 'Homecoming Support' (i.e., items assessing perceived support obtained from various sources). Two of the components of the overall HCI scale, Homecoming Attitudes and Homecoming Support, utilized Likert scales (e.g., 0 = never to 4 = very frequently) and thus were amenable to evaluation via traditional psychometric analyses.

Initial factor analysis of the Homecoming Attitudes scale yielded a four-factor structure: Positive Attitudes/Engagement, Negative Attitudes/Disengagement, Special Privileges, and Readjustment Problems that together accounted for 44 percent of the variance in Homecoming Attitudes. Reliability analyses were also conducted on the items that comprised each of these four factors. A review of all relevant psychometrics, as well as wording considerations, led to the identification of particularly problematic HCA items. The HCA was revised in light of these considerations. A second factor analysis, conducted on the revised HCA, revealed three factors (Readjustment Problems, Positive Attitudes/Engagement, Negative Attitudes/Disengagement) that accounted for 50 percent of the variance in HCA scores. Reliability analyses of the revised scales demonstrated increases in the reliability of each of the three subscales of the HCA. Individual item analysis suggests that the items that presently comprise the revised HCA are of optimal strength. This does not preclude, however, the addition of new items that may further improve the reliability of the HCA subscales.

Reliability and factor analyses were also conducted on the Homecoming Support scale. Results indicated that the HCS contained four factors that accounted for 71 percent of the variance in responses to the HCS: Organizational Support (e.g., the CF/Cultural/Public), Support from members of respondents' Birth Family (e.g., mother, father, siblings), Support from Friends and Colleagues (e.g., friends, colleagues who deployed with you, colleagues who did not deploy with you), and Support from Spouse/Partner and Children. The reliabilities of each of the factors were also quite adequate. Overall, these items have a good face validity, tap relevant multiple sources of support, and cluster into reliable and meaningful factors. This would suggest that all items on the HCS be retained. Only the "support from other family members" item had any ambiguity associated with it. On the other hand, results of frequency analyses suggested that other family members were often used as a source of support and, when used were perceived as providing substantial levels of support. Results indicated that it was not clear which factor of the Support scale it most clearly loaded upon. Further, the meaning of the "not applicable" category may be clarified by including items tapping sources of support sought, and of those, the level of support that was received.

Inspection of the items within the Homecoming Events Scale suggested the presence of four different content areas: Homecoming Celebrations, Homecoming Problems, Homecoming Living Conditions, and Postdeployment Leave. Response options to the Homecoming Events portion of the HCI scale were categorical in nature (e.g., yes/no). Although this response format is not amenable to traditional psychometric analyses, these items do provide insight into aspects of the homecoming experience of CF personnel returning from peace support operations. Results here showed that there was a lack of homecoming celebrations marking the return of peace support operation personnel. This result is particularly sobering in light of the research that suggests that initial homecoming reception is implicated in long term psychological adaptation (e.g., Fontana and Rosenheck, 1994).

It also appeared that very few of the respondents experienced many problem behaviors since their return. Results indicated very little incidence of problems with the law, increased health or medical concerns, or increases in alcohol consumption for respondents since their return from deployment. Although these results may reflect a reluctance to admit to problems of this nature, it is also important to note that the Postdeployment survey was entirely anonymous (i.e., no names or service numbers appeared anywhere on the questionnaire), thus reducing social desirability or concerns about disciplinary actions. As encouraging as these results are in terms of the overall adjustment of this sample, these analyses need to be replicated in a variety of other peacekeeping samples and over the long-term before general conclusions about the long-term adjustment of CF peace support operations personnel can be made. Finally, as might be expected, the majority of recently returned peace support personnel greatly enjoyed their post-deployment leave.

A series of exploratory correlational analyses addressed the relation among and between the HCA and HCS measures, and the relation of the HCA and HCS to other stress, coping, and adaptation measures also included in the HDO Postdeployment Questionnaire. These analyses were conducted to address four exploratory questions:

(1) What are the relations between the HCA and HCS scales, and the demographic profile of the respondents?

As might be expected, readjustment problems were associated with the presence of negative attitudes. Interestingly, positive attitudes appeared to be quite distinct and uncorrelated to either readjustment problems or to negative attitudes, revealing the complexity of at least some post-deployment attitudes. The specific causes, correlates, and consequences of these complex attitudes remain an important question to be pursued in the future.

Results also indicated that, with one exception, positive correlations existed among sources of perceived social support. Specifically, there was little correlation between perceived support from parents and siblings and perceived support provided by friends and colleagues. However, that it is often the case that regular force personnel and their families are well integrated into the social life and network that exists within their bases, whereas mothers father and siblings are often located far away from the service person. Thus, the higher correlations among perceived support from partner, friends and the CF in general may reflect the more integrated nature of this social network or the immediacy of this social network. It remains important to compare the

perceived support results obtained from this sample of regular force personnel who deployed as a formed unit with results obtained from reservists and augmentees who deploy as individuals or in small groups and often do not feel the same degree of collegial and organizational support (Gignac, 1998, Thompson & Gignac, 1999).

The pattern of the relations between the HCA and HCS indicated that positive attitudes were related to higher levels of perceived support from all sources. The direction of the effect between perceived social support and postdeployment-related attitudes is interesting to consider. It may be that the presence of a source of support promotes or bolsters the positive attitudes and emotions associated with the deployment. The existence of positive attitudes and emotions may also facilitate more positive social exchanges with others and thus, be related to higher levels of perceived support. Finally a more general optimistic outlook may be the root cause of both positive attitudes and greater support.

A similar pattern was not observed with respect to negative attitudes or readjustment problems and perceived support. Specifically, negative attitudes were unrelated to perceptions of support from family, friends or from one's spouse/partner. This result is not necessarily surprising, however. Negative attitudes and emotions, and expressing readjustment problems, may actually promote support attempts from others, at least in the short term. However, when negative attitudes and problems in adjustment persist there may be concomitant reductions in support attempts from others and thus, in perceived support (King, King, Fairbank, Keane, & Adams, 1998; Solomon, Smith, Robins & Fishbach, 1987). One interesting departure from this pattern of results did exist however: the expression of negative attitudes/disengagement was significantly related to less perceived support from within the CF. An inspection of the HCA indicates that the Negative Attitudes/Disengagement items largely deal with thoughts and feelings aimed at organizational levels (e.g., *You felt*: '*Disinterest at work*', '*Anger at government*', '*like getting out of the military*' and '*Difficulties with professionalism*'. Put into this perspective, the high correlation between Negative Attitudes and a lack of perceived support from the CF ($r = -.37$) makes a great deal of sense. Future research should be directed toward understanding the direction of this effect. For instance, is a perceived lack of support from the CF a precursor of these more negative attitudes, or do more negative attitudes lead to a lack of perceived support from the CF, or does some third variable account for this result? Only longitudinal research will help disentangle this result.

(2) What is the relation between each of the HCA and HCS scales and self-reports of depression, anxiety, hyper-alertness, and somatic complaints (as measured by the SIGNS scale)?

As might be expected, both readjustment problems and negative attitudes as assessed by the HCA were associated with a range of psychological and physical symptoms tapped by the SIGNS scale. Positive attitudes of the HCA scale were not associated with any of the symptoms tapped by the SIGNS. Although the perceived support measures (from the HCS scale) in some cases were related to the symptoms assessed by the SIGNS, the pattern that emerged was again not as clear as that between the HCA scales and the SIGNS. The strongest relation appeared to exist between measures of support and self-reports of depression, although the magnitude of these effects was small.

(3) What is the relation between each of the HCA and HCS scales and self-reports of military stressors?

It comes as no surprise that problems with reintegration and negative attitudes were related to a variety of stressors associated with military service. Perhaps the most interesting findings here were: 1) the lack of association between positive attitudes and stressors associated with military service, and 2) an association between both positive attitudes and the tour in perspective with a higher incidence of combat-related stress. It is possible that this latter pattern of findings reflects a process of psychological adaptation. It may be that, at least for some people who have experienced combat stress, cognitive and emotional reframing of the event has begun. These people may be able to put the stress-related aspects of their tour into a more positive perspective overall, leading to more positive deployment attitudes. This intriguing notion is left for future research to address more fully.

(4) What is the relation between each of the HCA and HCS scales, and attitudes toward morale and various leadership dimensions, measured by the UCP?

Readjustment problems and negative attitudes were related to several dimensions assessed by the Unit Climate Profile. More negative attitudes were associated with scales that tapped personal levels of morale as well as perceptions of leadership throughout the chain of command. Positive attitudes again showed a distinct pattern of results, relating most strongly to the more philosophical dimensions of military ethos and professional morale, but not with leadership behaviors. Of the perceived support measures, perceptions of organizational support were most associated with UCP dimensions. Specifically, higher perceived organizational support was related to more positive assessments of morale, cohesion, and leadership among this sample.

CONCLUSION

Overall, the results of these analyses are quite encouraging concerning the utility of the HCI scale. First, a review of the literature suggests the overall importance of homecoming reception in terms of the short and long-term post-deployment psychosocial adjustment of military personnel returning from a peace support operation. Second, the HCI specifically covers three areas critical to homecoming reception and by extension, critical to the long-term psychosocial adjustment. Third, reliability analyses reported here reveal the psychometric coherence of the HCI and its component measures of the HCA, HCE and HCS scales.

The pattern of results generated by the correlational analyses was also used to explore the validity of the HCA and the HCS measures. In general, the pattern of findings was in expected directions, providing preliminary evidence of the validity of the HCA and HCS measures. Analyses presented here suggest that the HCI scale does tap attitudes relevant to reintegration and readjustment problems, negative and positive attitudes and perceptions of support of CF personnel who have returned from peace support operations.

However, as noted in the introduction, the HDO Postdeployment Questionnaire was not specifically designed to provide tests of the validity of the HCA and HCS. That is, the HDO was not designed to provide specific tests of either the convergent or discriminant validity of the measures. Moreover, although correlations are usually in the expected direction, the magnitude of the correlations was typically moderate to low, rather than high, as one would prefer in a carefully designed validity study, particularly with respect to the HCS. Thus, these results of the correlational analyses presented are clearly exploratory in nature and should be used to in terms of establishing the validity of the scales with due caution.

We made a number of recommendations concerning the refinement of these measures. With respect to the Homecoming Attitudes Scale, we suggested the deletion of Item 6 – "*You regretted that you served in Bosnia*". We further advocated modifications in wording or the moving of the item for the following: Item 7 – "*You experienced marital or relationship problems*", Item 8 – "*You felt anger at the government*", Item 10 – "*You separated or divorced from your partner*", Item 14 – "*You felt like getting out of the military*". We also suggested the elimination of the *Special Privileges* factor due to its weak psychometric values. Results from the factor and reliability analyses conducted here suggested that all of the items comprising the Homecoming Support scale should be retained. It may be worth exploring further the psychological significance of the percentage of respondents who felt that the CF was not an applicable source of support for them.

Our analyses here suggest that the adoption of these recommendations would increase the reliability and validity of these measures. This would certainly not preclude the addition of new items that might further enhance the utility of the HCI. In conclusion, we would strongly recommend the inclusion of the refined HCI in all future HDO postdeployment questionnaires.

REFERENCES

American Psychiatric Association (1994). **Diagnostic and statistical manual of mental disorders** (4th ed.), Washington, DC: Author

Bartone, P. T, Adler, A. B, & Vaitkus, M. A. (1998). **Dimensions of stress in peacekeeping operations**. Military Medicine, 163, 587-593.

Campbell, D. T. & Fiske, D. W. (1959). **Convergent and discriminant validation by the multitrait-multimethod matrix**. Psychological Bulletin, 56, 81–105.

Capstick, M. D. (in press). **Command and leadership in other people's wars**. In C. McCann & R. A. Pigeau (Eds.), The Human in Command: Exploring the Modern Military Experience (pp. 83-91). New York: Academic/Plenum Publishers.

Cronbach, L. J & Meehl, P. E. (1955). **Construct validity in psychological tests**, Psychological Bulletin, 52, 281-302.

Dallaire, R. A. (in press). **Command experiences in Rwanda**. In C. McCann & R. A. Pigeau (Eds.), The Human in Command: Exploring the Modern Military Experience (pp. 29-50). New York: Academic/Plenum Publishers.

Davis, J. R. (1997). **The sharp end: A Canadian soldier's story**. Vancouver: Douglas and MacIntyre.

Dobreva-Martinova, T. (1998a). **Psychometric analyses of the Stress in Military Service Questionnaire based on surveys of deployed Canadian Forces personnel**. Sponsor Research Report 98-16, Directorate for Human Resources Research and Evaluation. National Defence Headquarters, Ottawa, Canada.

Dobreva-Martinova, T. (1998b). **Psychometric analyses of the SIGNS scale based on surveys of deployed Canadian Forces personnel**. Sponsor Research Report 98-17, Directorate for Human Resources Research and Evaluation. National Defence Headquarters, Ottawa, Canada.

Dobreva-Martinova, T. (1999). **The Human Dimensions of Operations (HDO) Project: An Overview.** Unpublished manuscript. Directorate for Human Resources Research and Evaluation. National Defence Headquarters, Ottawa, Canada.

Dobreva-Martinova, T., Murphy, P. J. & Farley, K. M. J. (1998). **The human dimension of peacekeeping: Selective analyses from the Canadian experience**. Paper presented at the 21st Annual Scientific Meeting of the International Society of Political Psychology, Montreal, Canada, July 12-15.

Everts, P. L. E. M. (in press). **Command and control in stressful conditions**. In C. McCann & R. A. Pigeau (Eds.), The Human in Command: Exploring the Modern Military Experience (pp. 65-81). New York: Academic/Plenum Publishers.

Farley, K. M.J. and Murphy, P. J. (in press). **Morale, cohesion and confidence in leadership: Unit climate dimensions for Canadian soldiers on operations**. In C. McCann, & R. A. Pigeau (Eds.), The Human in Command: Exploring the Modern Military Experience. New York: Academic/Plenum Publishers.

Fontana, A. & Rosenheck, R. (1994). **PTSD among Vietnam theater veterans: A causal model of etiology in a community sample**. Journal of Nervous and Mental Disease, 182, 677-684.

Gignac, M.A.M. (1998). **Understanding the peacekeeping process: Methodology and selected findings from a study of Canadian peacekeepers**. Contractor's Report.

Halverson, R. R., Bliese, P. D., Moore, R. E., & Castro, C. A. (1995). **Psychological well-being and physical health symptoms of soldiers deployed for Operation Uphold Democracy: A summary of Human Dimensions Research in Haiti.** Walter Reed Army Institute of Research, Department of Military Psychiatry.

Johnson, D., Lubin, H., Rosenheck, R., Fontana, Southwick, S. & Charney, D. (1997). **The impact of homecoming reception on the development of posttraumatic stress disorder: The West Haven Homecoming Stress Scale (WHHSS).** Journal of Traumatic Stress, 10, 259-277.

King, L. A., King, D. W., Fairbank, J. A., Keane, T. M., & Adams, G. A. (1998). **Resilience-recovery factors in posttraumatic stress disorder among female and male Vietnam veterans: Hardiness, postwar social support, and additional stressful life events.** Journal of Personality and Social Psychology, 74, 420-434.

Keane, T. M., Caddell, J. M. & Taylor, K, L. (1988). **Mississippi scale for combat-related posttraumatic stress disorder: Three studies in reliability and validity.** Journal of Consulting and Clinical Psychology, 56, 85-90.

Lamerson, C. D. & Kelloway, E. K. (1996). **Towards a model of peacekeeping stress: Traumatic and contextual influences.** Canadian Psychology, 37, 195-204.

Litz, B. T., King, L. A., & King, D. W. (1997). **Warriors as peacekeepers: Features of the Somalia experience and PTSD.** Journal of Consulting and Clinical Psychology, 65, 1001-1010.

MacKenzie, L. (1993). **Peacekeeper: The road to Saralevo.** Vancouver: Douglas & McIntyre.

Murphy, P. J. & Gingras, C. (1997a). **The incidence and impact of traumatic experience in CF personnel.** Personnel Research Team Research Note.

Murphy, P. J., & Gingras, C. (1997b). **Postdeployment support: Guidelines for program development.** Sponsor Research Report 97-4. Personnel Research Team.

Orsillo, S. M., Roemer, L., Litz, B. T., Ehlich, P., & Friedman, M. J. (1998). **Psychiatric symptomology associated with contemporary peacekeeping: An examination of post-mission functioning among peacekeepers in Somalia,** Journal of Traumatic Stress, 11, 611-625.

Selltiz, C., Wrightsman, L. S. & Cook, S. W. (1976). **Research methods in social relations,** 3rd edition. New York: Holt, Rinehart &Winston.

Solomon, S. D., Smith, E. M., Robins, L. N., & Fishbach, R. L. (1987). **Social involvement as a mediator of disaster-induced stress.** Journal of Applied Social Psychology, 17, 1092-1112.

Tabachnick, B. G. & Fidell, L. S. (1996). **Using multivariate statistics,** 3rd edition. New York: HarperCollins College Publishers.

Thompson, M.M. & Gignac, M.A.M., (1999). **The Peace Support Operations Adaptation Model (PSOAM),** Manuscript in preparation, DCIEM.

Wilson, J. P. & Krauss, G. E. (1985). **Predicting post-traumatic stress disorders among Vietnam veterans.** In W. E. Kelly (Ed.), Post-traumatic stress disorder and the war veteran patient (pp. 102-147). New York: Brunner/Mazel.

ENDNOTE

1. The biographical data is presented as simple frequencies (versus the more traditional format of means ranges, and standard deviations) as most of the biographical questions in the Postdeployment Questionnaire used a categorical (rather than continuous) answer format.

Table 1: Demographics of the Postdeployment Sample (N=202)

ITEM	CATEGORY	N	ITEM	CATEGORY	N
RANK	Pte	43	AGE	17-21 yrs	4
	Jr NCM,	157		22-26 yrs	80
	Missing	2		27-31 yrs	65
GENDER	Male	198		32-36 yrs	43
	Female	2		37+ yrs	7
	Missing	2		Missing	3
MARITAL STATUS	Married/partner	125	1st LANGUAGE	English	183
	single	62		French	6
	separated	7		Other	6
	other	7		Missing	7
	Missing	1	EDUCATION	Some high school	30
DEPENDENTS	none	113		Completed high school	113
	1 child	40		Some post high school	48
	2 children	31		University	8
	3 children	10		Missing	3
	4 children	3	CONDUCT	No convictions	193
	Missing	5		At least one conviction	9
NUMBER OF	0	5		Missing	0
PREVIOUS TOURS	1	82	MEDICALVISITS	0	35
	2	61	IN LAST 6 MTHS;	1 or 2	97
	3	36		3 or 4	53
	4	10		5 or more	16
	5 or more	5		Missing	1
	Missing	3			
YEARS OF	0-4 years	58	MILITARY	Regular force	201
SERVICE	5-9 years	84	STATUS	Reservist	2
	10-14 years	40		Missing	0
	15 or more	20			
	Missing	0			

Table 2: Principal Components Analysis with Varimax normalized Rotation of the 23 Item Homecoming Attitudes Scale

	Factor Loadings			
Item \ Factor	Negative Attitudes/ Disengagement	Positive Attitudes/ Engagement	Special Privileges	Readjustment Problems
1. You felt proud		.71		
1. Stranger in a strange land				
2. Disinterest at work	.63			
3. Family proud of you		.77		
4. Political discussion re: Bosnia		.52		
5. Regretted serving in Bosnia		-.57		
6. Marital problems				.66
7. Anger at government	.63			
8. Dropping out of society	.43			
9. Separated/divorced from partner				
10. Returning to Bosnia			.52	
11. Period of adjustment, self				.76
12. Special privileges, organizations			.62	
13. Getting out of military	.69			
14. Felt resentment	.65			
15. Period of adjustment, family				.83
16. Public speaking				
17. Others avoid listening				
18. Period of adjustment, work				.67
19. Special privileges, work			.69	
20. Dropping out of family life				.54
21. Difficulties with professionalism	.64			
22. Changed for the better		.51		
Explained Variance	2.77	2.3	1.97	3.07
Proportion Total Variance	.12	.10	.09	.13

Note: retained items have factor loadings > .40

Table 3: Correlations among Oblique Factors of the Homecoming Attitudes Scale

	Negative Attitudes/ Disengagement	Positive Attitudes/ Engagement	Special Privileges	Readjustment Problems
Negative Attitudes/ Disengagement	--			
Positive Attitudes/ Engagement	-.20	--		
Special Privileges	.26	.18	--	
Readjustment Problems	.50	-.01	.24	--

Table 4: Means and Standard Deviations and Reliability Analyses for the Four Factor Homecoming Attitudes Scale

	Mean	Standard Deviation	Item-Total Correlation	Alpha if deleted
Factor 1: Negative Attitudes/Disengagement				
3. Disinterest at work	1.64	1.06	.46	.72
8. Anger at government	1.51	1.30	.47	.72
9. Dropping out, society	.46	.85	.44	.73
14. Out of military	1.42	1.35	.55	.70
15. Felt resentment	1.06	1.08	.50	.71
22. Work professionalism	.80	1.05	.54	.70
Cronbach alpha: .75	**Average inter-item correlation: .34**			
Factor 2: Positive Attitudes/Engagement				
1. You felt proud	2.52	.99	.39	.11
4. Family proud	2.85	1.01	.40	.09
5. Political discussions	1.27	1.08	.29	.19
6. Regretted service	.55	.87	-.37	.61
23. Changed for the better	1.39	1.19	.23	.25
Cronbach alpha: .35	**Average inter-item correlation.: .08**			
Factor 3: Special Privileges				
11. Return to Bosnia	.30	.75	.23	.38
13. special privileges	.43	.70	.23	.37
20. special privileges, work	.23	.54	.32	.24
Cronbach alpha: .42	**Average inter-item correlation: .21**			
Factor 4: Readjustment Problems				
7. Marital problems	.87	1.14	.44	.78
12. Adjustment penod, self	1.17	1.03	.62	.71
16. Adjustment period, family	1.22	1.08	.72	.67
19. Adjustment period, work	1.28	1.03	.57	.73
21. Dropping out, family	.33	.83	.43	.78
Cronbach alpha: .78	**Average inter-item correlation: .42**			

Table 5: Principal Components Analysis with Varimax Normalized Rotation of the Revised Homecoming Attitudes Scale

	Factor Loadings		
Item \ Factor	Readjustment Problems	Positive Attitudes/ Engagement	Negative Attitudes/ Disengagement
1. You felt proud		.76	
2. Difficulties at work			.67
3. Your family was proud		.81	
4. Political discussions about Bosnia		.60	
5. Marital relationship problems	.61		
6. Anger at government			.65
7 Dropping out of society	.38		.47
8 Period of adjustment, self	.76		
9. You felt like leaving the military			.73
10 Resentment of others			.59
11 Period of adjustment, family	.85		
12. Period of adjustment, work	.66		
13. Dropping out of family	.63		
14. Difficulties in professionalism			.64
15. Changed for the better		.53	
Explained Variance	2.90	2.11	2.57
Proportion Total Variance	.19	.14	.17

Note: retained items have factor loadings > .40.

Table 6: Correlations of Oblique Factors of the Revised Homecoming Attitudes Scale

	Readjustment Problems	Positive Attitudes	Negative Attitudes
Readjustment Problems	--		
Positive Attitudes/ Engagement	.12	--	
Negative Attitudes/ Disengagement	.49	-.09	--

Table 7: Means, Standard Deviations and Reliability Analysis of the Revised Homecoming Attitudes Scale.

	Mean	Standard Deviation	Item-Total Correlation	Alpha if Item deleted
Factor 1: Readjustment problems				
7. Marital problems	.87	1.14	.44	.78
12. Adjustment to self	1.17	1.03	.62	.71
16. Adjustment to family	1.22	1.08	.72	.67
19. Adjustment to work	1.28	1.03	.57	.73
21. Dropping out of family	.33	.83	.43	.78
Cronbach alpha: .78	**Average inter-item correlation: .42**			
Factor 2: Positive Attitudes/Engagement				
1. You felt proud	2.51	1.00	.50	.50
4. Your family was proud	2.83	1.03	.49	.50
5. Political discussions	1.27	1.08	.35	.60
23. Changed for the better	1.38	1.19	.32	.63
Cronbach alpha: .63	**Average inter-item correlation: .31**			
Factor 3: Negative Attitudes/ Disengagement				
3. Disinterest at work	1.64	1.06	.46	.72
8. Anger at government	1.51	1.30	.47	.72
9. Dropping out of society	.46	.85	.44	.73
14. Out of military	1.42	1.35	.55	.70
15. Resentment others	1.06	1.08	.50	.71
22. Unprofessionalism	.80	1.05	.54	.70
Cronbach alpha: .75	**Average inter-item correlation: .34**			

Table 8: Response Frequencies for the Homecoming Events Scale

Item	Response Category	Count	Percent
Family party or celebration for your return	Yes	54	26.7
	No	148	73.3
Participate in a homecoming parade in your city or town	Yes	5	2.5
	No	197	97.5
Participate in a homecoming parade at your base/barracks	Yes	17	8.4
	No	185	91.6
Alcohol increase postdeployment	Yes	19	9.4
	No	183	90.6
Trouble with law postdeployment	Yes	10	4.9
	No	192	95.1
Serious postdeployment health problems	Yes	37	18.3
	No	165	81.7

Table 9: Response Frequencies for Postdeployment Leave Items

Item	Response Category	Count	Percent
Spent postdeployment leave with family	Yes	174	86.1
	No	26	12.9
	Missing	2	.99
Length of Postdeployment leave	1-6 days	10	4.95
	7-13 days	6	2.97
	14-21	17	8.42
	21-27 days	28	13.9
	28+ days	137	67.8
	Missing	4	1.98
Enjoyment of Postdeployment leave	Not at all	3	1.49
	A little	13	6.44
	Somewhat	38	18.81
	Considerably	52	25.74
	Greatly	91	45.05
	Missing	5	2.48
Postdeployment Residence	Single in barracks	35	17.3
	Out w. friends	13	6.4
	Out sharing	3	1.49
	Out alone	13	6.4
	Partner & children	76	37 6
	Partner	49	24.3
	Children only	1	.50
	Other	2	.99
	Missing	10	5.0

Table10: Principal Components Analysis of the Homecoming Issues Support Scale

	Factor Loadings (Varimax normalized)			
	Organizational Support	Birth Family	Friends & Colleagues	Partner/Spouse & Children
Mother		.76		
Father		.81		
Spouse/Partner				.83
Siblings		.73		
Children				.79
Other Family			.55	
Friends			.84	
Deployed Colleagues			.81	
Nondeployed Colleagues			.67	
Unit	.75			
CF	.92			
Cdn. Gov.	.91			
Cdn. Soc.	.78			
Explained Variance	3.10	2.10	2.48	1.40
Proportion of Total Variance	.24	.16	.19	.11

Note: retained items have factor loadings > .40.

Table 11: Correlations between Oblique Factors of the Homecoming Issues Support Scale

	Organizational Support	Birth Family	Friends & Colleagues	Partner/Spouse & Children
Organizational Support	--			
Birth Family	.36	--		
Friends & Colleagues	.52	.48	--	
Spouse/Partner & Children	.19	.04	.29	--

Table 12: Item Means, Standard Deviations and Reliability Analyses of the Homecoming Support Scale

	Item Mean	Item Std. Dev.	Item-Total Correlation	Alpha if Item deleted
Factor 1: Organizational/ External Support (n=163)				
Unit Support	2.55	.74	.74	.85
CF Support	2.40	.81	.85	.80
Cdn. Gov.	2.23	.80	.84	.81
Cdn. society	2.33	.72	.56	.91
Cronbach alpha: .88	**Average inter-item correlation: .67**			
Factor 2: Birth Family Support (n = 137)				
Mother Support	3.26	.60	.65	.80
Father's Support	3.26	.65	.84	.80
Sibling's Support	3 18	.67	.69	.94
Cronbach alpha: .89	**Average inter-item correlation: .76**			
Factor 3: Friends and Colleagues Support (n = 154)				
Friends	3.10	57	.66	.72
Deployed Colleagues	3.08	58	.67	.70
Non-Deployed Colleagues	2.83	.71	.63	.77
Cronbach alpha: .80	**Average inter-item correlation: .58**			
Factor 4: Spouse/Partner & Children Support				
Spouse/Partner	3 40	.77	--	--
Children	3 31	68	--	--
No Cronbach's alpha available as scale is comprised of only two items.				

Table13: Response Frequencies of Sources of Postdeployment Support

	Not Applicable		Very Unsupportive		Unsupportive		Supportive		Very Supportive		Missing	
	N	%	N	%	N	%	N	%	N	%	N	%
Mother	[illegible]	11.4	[illegible]	.99	[illegible]	3.5	[illegible]	53.0	[illegible]	29.2	[illegible]	2
Father	[illegible]	20.3	[illegible]	2.0	[illegible]	4.0	[illegible]	45.1	[illegible]	26.7	[illegible]	2
Spouse	[illegible]	20.8	[illegible]	2.5	[illegible]	5.5	[illegible]	26.7	[illegible]	40.1	[illegible]	4.5
Siblings	[illegible]	15.4	[illegible]	.99	[illegible]	9.9	[illegible]	46.0	[illegible]	25.3	[illegible]	2.5
Children	[illegible]	60.9	[illegible]	.99	[illegible]	.99	[illegible]	18.3	[illegible]	13.4	[illegible]	5.5
Other Family Members	[illegible]	28.7	[illegible]	1.5	[illegible]	7.4	[illegible]	42.1	[illegible]	17.3	[illegible]	3
Friends	[illegible]	12.6	[illegible]	.99	[illegible]	8.9	[illegible]	56.9	[illegible]	18.8	[illegible]	2
Deployed Colleagues	[illegible]	10.4	[illegible]	1.5	[illegible]	8.4	[illegible]	57.9	[illegible]	18.8	[illegible]	3
Non-dep. Colleagues	[illegible]	14.4	[illegible]	4.5	[illegible]	16.3	[illegible]	51.0	[illegible]	11.4	[illegible]	2.5
CF	[illegible]	11.9	[illegible]	13.9	[illegible]	27.7	[illegible]	41.0	[illegible]	3.5	[illegible]	2.5
Canadian Government	[illegible]	13.9	[illegible]	17.8	[illegible]	31.2	[illegible]	32.2	[illegible]	2.0	[illegible]	3
Canadian Society	[illegible]	12.4	[illegible]	11.4	[illegible]	36.1	[illegible]	35.2	[illegible]	1.5	[illegible]	3.5

Table 14: Correlations among Homecoming Attitudes, and Homecoming Support for Bosnia1 Postdeployment Sample

		1	2	3	4	5	6	7
HOMECOMING ATTITUDES	1. READJUSTMENT PROBLEMS	--	.12	.40 *	-.12	-.03	-.007	.09 *
	2. POSITIVE ATTITUDES/ ENGAGMENT		--	-.117	.36 *	.22 *	.34 *	.05
	3. NEGATIVE ATTITUDES/ DISENGAGEMENT			--	-.37 *	-.02	-.15 *	-.06 *
HOMECOMING SUPPORT	4. ORGANIZATIONAL SUPPORT				--	.36 *	.49 *	.19 *
	5. BIRTH FAMILY SUPPORT					--	.40 *	.047
	6 FRIENDS & COLLEAGUES						--	.26 *
	7. SPOUSE/PARTNER & CHILDREN							--

* = $p < .05$

Table 15: Correlations of Homecoming Attitudes and Homecoming Support scales with *SIGNS* Subscales for the Bosnia1 Postdeployment Sample N=169 (Casewise deletion of missing data)

	Depression/ Withdrawal	Hyper-Alertness	Generalized Anxiety	Somatic Complaints
Cronbach Alpha	.81	.80	.62	.60
Readjustment Problems	.41 *	.24 *	.28 *	.27 *
Positive Attitudes	-.02	.00	.00	-.07
Negative Attitudes	.43 *	.37 *	.26 *	.29 *
Organizational Support	-.17 *	-.12	-.08	-.18 *
Birth Family Support	-.16 *	-.04	-.001	-.12
Friends &Colleagues Support	-.19 *	-.15 *	-.07	-.17 *
Spouse/Partner Children Support	-.10	.05	-.07	-.01
Homecoming Support Total	-.10	.01	.03	-.08

* = $p < .05$

Table 16: Correlations of Homecoming Attitudes and Homecoming Support with Stress in Military Service, Service Experiences and the Tour in Perspective Scales for the Bosnia 1 Postdeployment Sample N=148 (Casewise deletion of missing data)

	Stress in Military Service Total	SMS Work Environment	SMS External Conditions	SMS Combat Stress	SMS Career Issues	SMS Family Concerns	Service Expenences Total	Tour in Perspective Total
Cronbach Alpha:	.92	.87	.85	.86	.83	.82	.57	.73
Readjustment Problems	.33 *	.19 *	.30 *	.16 *	.17 *	.51 *	.41 *	-.09
Positive Attitudes	-.02	-.12	.02	.23 *	-.01	-.06	-.11	.48*
Negative Attitudes	.45 *	.43 *	.41 *	.15	.32 *	.24 *	.41 *	-.30 *
Organizational Support	- 27 *	-.32 *	-.22 *	-.018	-.26 *	-.07	- 22 *	30
Birth Family Support	- 01	-.07	05	.05	-.00	- 01	-.25 *	-.05
Friends /Colleag. Support	.02	.03	-.07	.04	07	-.12	-.14	.23 *
Spouse/Partner & Children Support	.07	.02	.06	.19 *	-.05	.10	-.11	- 04

* = $p < .05$

Table 17: Correlations of Homecoming Attitudes and Homecoming Support with Unit Climate Profile Scales for the Bosnia 1 Postdeployment Sample N=148 (Casewise deletion of missing data)

	M/C	Pos Ldr	SNCo Conf	Mil Ethos	Neg Ldr	Pl Cm Ldr	CSM Ldr	Co Cmd Ldr	Sec Cmd Ldr	Ideol	Prof morale
Cronbach Alpha	.94	.85	.89	.82	.83	.94	.96	.94	.93	.86	.60
Readjustment Problems	-.33 *	- 28 *	-.26 *	- 17 *	-.02	-.16 *	-.14	-.20 *	- 28 *	.08	-.13
Positive Attitudes	.10	.17 *	.19 *	.43 *	.11	.13	- 03	.13	-.06	.02	.29 *
Negative Attitudes	-.41 *	-.30 *	-.27 *	-.32 *	-.16 *	-.18 *	-.22 *	-.31 *	-.29 *	-.04	-.08
Organizational Support	.21 *	.28 *	.21*	.21 *	.27 *	.09	.26 *	.40 *	.15	08	.05
Birth Family Support	.07	.09	.09	.07	.16 *	-.07	.04	-.01	.09	.10	-.07
Fnends /Colleag. Support	.10	.08	.11	.24 *	06	-.06	-.06	.03	.14	-.01	.11
Spouse/Partner & Children	008	-.06	.02	.02	-.02	02	-.13	-.02	.04	.17 *	-.06

* = $p < .05$

KEY. M/C = Personal Morale
POS LDR = Positive Leadership Behaviors
SNCo CONF = Confidence in Senior Non-Commissioned Officer
MIL ETHOS = Military Ethos
NEG LDR = Negative Leadership Behaviors
PLCM LDR = Platoon Commander Leadership
CSM LDR = Sergeant Major Leadership
CO CMD LDR = Company Commander Leadership
SEC CMD LDR = Section Commander Leadership
IDEOL = Ideology Subscale
PROFMOR = Professional Morale

APPENDIX A: THE HOMECOMING ISSUES SCALE

Homecoming Issues

0	1	2	3	4
Never	Rarely	Sometimes	Frequently	Very Frequently

This section explores a variety of issues about the transition back into family, work and society after your deployment. Using the following scale, please indicate how often each of the following occurred since your return from your deployment?

1. You felt proud about having served overseas.
2. You felt like a stranger in a strange land.
3. You experienced difficulties maintaining your interest at work.
4. You felt your family was proud of you for serving overseas.
5. You became interested in political discussions about the future of Bosnia.
6. You regretted having served in Bosnia.
7. You experienced marital or relationship problems.
8. You felt anger at the government.
9. You felt like "dropping out" of society.
10. You separated or divorced from your partner.
11. You thought about returning to Bosnia to help out in some other way than in uniform.
12. You experienced a period of adjustment getting back to your old self.
13. You were given special privileges or treatment *by people or organizations in the community* because of your deployment service.
14. You felt like getting out of the military.
15. You felt resentment over the way you were treated by people.
16. You experienced a period of adjustment settling back with your family.
17. You spoke in a public setting about your experiences of the deployment.
18. You tried to tell someone about your experiences on your deployment but the person was not interested or avoided listening.
19. You experienced a period of adjustment getting back to your normal work routine.
20. You were given special privileges or treatment by authorities at work or in the government because of your deployment service.
21. You felt like "dropping out" of family life.
22. You experienced difficulties maintaining your professionalism at work.
23. You felt that you had changed for the better as a result of your service in Bosnia.

Homecoming Issues (cont'd.)

Please answer the following questions in relation to the period since your return from Bosnia.

24. Did your family have a party or a celebration for your return? Yes No

25. Did you participate in a homecoming parade in your town or city? Yes No

26. Did you participate in a homecoming parade at your base or barracks? Yes No

27. Has your alcohol consumption increased compared to your pre-deployment drinking? Yes No

28. Since returning, have you had any trouble with the law? Yes No

29. Since returning, have you had any serious medical concerns or serious health problems? Yes No

30. Did you spend your leave after returning from deployment with your family? Yes No

31. How long was your period of immediate leave after returning from Bosnia?

1	2	3	4	5
1-6 days	7-13 days	14-20 days	21-27 days	28 or more days

32. How did you enjoy your leave after returning from Bosnia?

1	2	3	4	5
Not at all	A little	Somewhat	Considerably	Greatly

33. Which of the following describes your living arrangements since returning from deployment? (you may indicate more than one.)

a. Living as a single member in barracks in a mess.
b. Living out in shared accommodation with close friends
c. Living out in shared accommodation (not with close friends)
d. Living out by yourself
e. Living with your spouse/partner and children
f. Living with spouse/partner without children
g. Living with children
h. Other

34. Overall during the period of your return from Bosnia, what level of support did you receive from the following? Please use the scale provided.

0	1	2	3	4
Not applicable	Very Unsupportive	Unsupportive	Supportive	Very Supportive

a.	Your Mother	h.	Work colleagues who deployed with you
b.	Your Father	i.	Work colleagues who did not deploy with you
c.	Your Spouse/Partner	j.	Your unit
d.	Your Brothers/Sisters	k.	The CF
e	Your children	l.	The government
f.	Other family members	m.	Canadian society in general
g.	Friends		

APPENDIX B: RESULTS OF PRINCIPAL COMPONENTS ANALYSES WITH HIERARCHICAL OBLIQUE ROTATION OF THE HOMECOMING ATTITUDES SCALE

Appendix B: Principal Components Analysis with Oblique Rotation of the Homecoming Attitudes Scale

Item	Factor Loadings			
	Negative Attitudes/ Disengagement	Positive Attitudes/ Engagement	Special Privileges	Readjustment Problems
1. You felt proud		.71		
2. Stranger in a strange land				
3. Disinterest at work	.48			
4. Family proud of you		.77		
5. Political discussion re: Bosnia		.52		
6. Regretted serving in Bosnia		-.56		
7. Marital relationship problems				.52
8. Anger at government	.49			
9. Dropping out of society				
10. Separated/divorced from partner				
11. Returning to Bosnia			.48	
12. Period of adjustment, self				.59
13. Special privileges, organizations			.59	
14. Getting out of military	.52			
15. Felt resentment	.46			
16. Period of adjustment, family				.65
17. Public speaking				
18. Others avoid listening				
19. Period of adjustment, work				.47
20. Special privileges, work			.67	
21. Dropping out of family life				
22. Difficulties with professionalism	.45			
23. Changed for the better		.51		

Note: Retained items have factor loadings > .40

APPENDIX C: PRINCIPAL COMPONENT ANALYSIS WITH OBLIQUE ROTATION OF THE REVISED HOMECOMING ATTITUDES SCALE

Appendix C: Principal Component Analysis with Oblique Rotation of the Revised Homecoming Attitudes Scale

Item \ Factor	Factor Loadings		
	Readjustment Problems	Positive Attitudes/ Engagement	Negative Attitudes/ Disengagement
You felt proud		.76	
Difficulties at work			.53
Your family was proud		.81	
Political discussions about Bosnia		.60	
Marital relationship problems	.46		
Anger at government			.51
Dropping out of society			
Period of adjustment, self	.58		
You felt like leaving the military			.56
Resentment of others			.41
Period of adjustment, family	.65		
Period of adjustment, work	.46		
Dropping out of family	.46		
Difficulties in professionalism			.44
Changed for the better		.53	

Note: Retained items have factor loadings > .40.

APPENDIX D: PRINCIPAL COMPONENTS ANALYSIS WITH OBLIQUE ROTATION OF THE HOMECOMING ISSUES SOCIAL SUPPORT SCALE

Appendix D: Principal Components Analysis with Oblique Rotation of the Homecoming Issues Social Support Scale

	Organizational Support	Birth Family	Friends & Colleagues	Partner/Spouse & Children
Mother		-.62		
Father		-.71		
Spouse/Partner				-.80
Siblings		-.61		
Children				-.76
Other Family				
Friends			.61	
Deployed Colleagues			.57	
Nondeployed Colleagues			.46	
Unit	.57			
CF	.73			
Cdn. Gov.	.73			
Cdn. Soc.	.58			

APPENDIX E: CORRELATIONS OF THE HOMECOMING ATTITUDES AND THE HOMECOMING SUPPORT SCALE WITH DEMOGRAPHIC VARIABLES FOR THE POSTDEPLOYMENT SAMPLE.

Appendix E: Correlations of Homecoming Attitudes and Homecoming Support Scale with Demographic Data

	Rank	Number of Dependents	Previous Tours	Years of Service	Age	Language	Education	Medical
Readjustment Problems	.051 N=195	.211 * N=192	-.005 N=194	.091 N=197	.029 N=194	.094 N=190	.030 N=194	.113 N=196
Positive Attitudes	-.170 * N=196	-.037 N=193	-.092 N=195	-.206 * N=198	-.194 * N=195	-.042 N=191	.010 N=195	-.072 N=197
Negative Attitudes	.066 N=195	-.088 N=192	-.066 N=194	.024 N=197	-.009 N=194	.089 N=190	-.019 N=194	.118 N=196
Organizational Support	-.049 N=181	.095 N=179	-.069 N=180	-.061 N=183	-.123 N=181	.048 N=176	-.017 N=180	-.195 * N=182
Birth Family Support	-.009 N=191	.117 N=188	-.003 N=190	-.038 N=193	-.064 N=190	-.086 N=186	-.085 N=190	-.045 N=192
Spouse/Partner Children Support	.109 N=152	.603 * N=150	.217 * N=152	.244 * N=154	.275 * N=151	.076 N=148	.008 N=152	-.015 N=154
Friends and Colleagues Support	-.029 N=185	.162 * N=182	.031 N=184	-.096 N=187	-.055 N=184	.031 N=180	-.058 N=184	-.141 N=186

Note: * = $p < .05$

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The Homecoming Issues scale, developed by the Directorate of Human Resources Research and Evaluation (DHRRE) in support of the Human Dimensions of Operations (HDO) project, is designed to assess aspects relevant to the homecoming experience of Canadian Forces (CF) peacekeepers. The Homecoming Issues scale was distributed as part of the HDO's Postdeployment Questionnaire to 202 CF peacekeepers who had recently returned from a peace support operation in Bosnia.

An initial review of the items comprising the Homecoming Issues scale led to the decision to separate the scale into three subcomponents: Homecoming Attitudes (HCA), Homecoming Events (HCE), and Homecoming Support (HCS). Next, we determined the psychometric soundness of the HCA and the HCS scales via a series of factor and reliability analyses. The HCE scale was categorical in nature and so was not amenable to similar psychometric analyses. Thus, data obtained from this scale were used to assess the proportion of returning peacekeepers that had experienced a variety of homecoming events.

Results of these analyses led to item selection and refinement recommendations for each of the measures that assess homecoming issues. A second phase of exploratory correlational analyses was conducted to answer four questions:

1) What is the relation between each of the HCA and HCS scales, and the demographic profile of the respondents?

2) What is the relation between each of the HCA and HCS scales and self-reports of depression, anxiety, hyper-alertness, and somatic complaints?

3) What is the relation between each of the HCA and HCS scales and self-reports of military stressors?

4) What is the relation between each of the HCA and HCS scales, and attitudes toward morale and various leadership dimensions?

Answers to these questions also are used to explore the validity of the Homecoming Attitudes and Homecoming Support scales. Recommendations for specific refinements to the scales that comprise the HCI are also made. In general, results of these analyses suggest the relevance of exploring homecoming issues and the viability of the HCI scale in particular.

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(U) peace support operations; homecoming; homecoming attitudes; homecoming events; homecoming support; scale development

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